



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/551,006

05/30/2006

Jorg Peter

3425

1382

7590

08/21/2009

Walter A Hackler
Patent Law Office
2372 S E Bristol Street
Suite B
Newport Beach, CA 92660-0755

EXAMINER

PATEL, VISHAL A

ART UNIT

PAPER NUMBER

3676

MAIL DATE

DELIVERY MODE

08/21/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,006	Applicant(s) PETER ET AL.	
	Examiner Vishal Patel	Art Unit 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-8 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-8 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 10, 2-5 and 6-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant now claims "lubricant dragging bore reliefs", which are not described in the original disclosure of the application.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10, 2-3, 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franson et al (US. 5,127,661) in view of Workman (US. 3,497,225).

Franson discloses a sealing arrangement comprising a stationary machine part and a translatable movable machine part (e.g. the 84 is capable of moving in a translatable motion), a U-cup (e.g. 78) of a viscoplastic synthetic material, the stationary machine part (e.g. 68) and the translatable movable machine part (e.g. 84, due to the spring action between 84 and base wall of

Art Unit: 3676

the stationary part the machine part 84 is capable of moving in a translatory direction) with an outer radius R (Radius of 84), the U-cup (e.g. 78) is disposed as a contacting joint under radial pre-stress between the stationary machine part and the movable machine part in a profiled section (e.g. groove in 68 holding the U-cup) of the stationary machine part, the U-cup has a radially outer lip (e.g. 100) and a radially inner sealing lip (e.g. 92) on the high-pressure side, the stationary and the movable machine parts are separated on the low- pressure side by a sealing gap (e.g. gap near 80 between 68 and 84) of a sealing gap width B , wherein an abutment surface (e.g. 88) of the U-cup abuts a radially oriented region (e.g. back wall of the groove) of the profiled section on the low-pressure side, wherein the U-cup has an inner radius (inner radius of 78) and an outer radius (outer radius of 78), both in the unpressurized state and in the pressurized state, the inner radius of the U-cup in the region of the abutment surface is larger than the sum of R and B (figures 2 and 4 show this relation ship of radiuses) and the U-cup comprises an inner surface (e.g. inner surface of 92) facing the movable machine part. In the unpressurized state, the inner radius of the U-cup decreases (figure 4 shows that the inner radius decreases continuously), in particular continuously, from the low-pressure side towards the inner sealing lip (e.g. 92) in a region around the abutment surface. In the unpressurized state, the inner radius of the U-cup decreases continuously, in particular like a cone (cone shaped defined on the inner radius as shown in figure 4), from the low-pressure side N towards the inner sealing lip (e.g. 92) in a region from the abutment surface to the inner sealing lip. In that the U-cup has an outer surface (outer surface having 102) facing away from the movable machine part, the outer surface is curved concavely (concave surface after 102) in the unpressurized state. The inner surface is spaced from the movable machine part (as shown in figure 2, the inner surface of 102 is spaced

Art Unit: 3676

from the movable machine part having surface 84, hence any recesses placed on this surface will also be spaced from the movable machine part, furthermore any recess is incapable of contacting a surface).

Franson discloses the invention substantially as claimed above but fails to disclose that the inner surface comprising several lubrication bore relief that are recesses and the recesses each extend in an axial direction from the low pressure side of the U-cup toward the inner sealing lip, and the radial depth of the individual recesses decreases from the low-pressure side of the U-cup toward the inner sealing lip. Workman discloses a sealing member having a lip (e.g. 30), the lip having an inner surface (surface having recesses 42, 44 and etc), the inner surface having recesses (e.g. 42-46 and etc), the recesses extend from an air side (air side right of fig. 6), the recesses having a radial depth that decrease from the air side to the lip (the greatest depth of the recesses is at 49 and the least depth is at end opposite 49 at the lip). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the inner surface of the lip of Franson to have recesses as taught by Workman, to provide lubricant return and a film to reduce wear (column 1, lines 60-65 of Workman). Furthermore the recesses of Workman are considered to be microstructures (the term microstructure is a relative term and the recesses of Workman are microstructure relative large recesses).

Regarding limitations of intended use: Applicant has claimed that upon or if the shaft is moved in the translatory direction fluid will be dragged from a first position to a second position, this would also be the case for the invention of Franson and Workman, since the references teach all the structural limitations of the claims (e.g. shaft that is capable of moving in a translatory direction and recesses on the inner surface of the U-shape cup). **Furthermore when a shaft is**

Art Unit: 3676

moved in a translatory motion the lubricant bore reliefs would provide dragging of the lubricant.

5. Claims 4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franson and Workman as applied to claims above, and further in view of Haberkorn (US, 3,189,359).

Regarding claims 4 and 6-7: Franson and Workman fail to disclose that the outer and inner surface near the abutment surface is convex. Haberkorn teaches a seal having a U-shape having an abutment surface (12) and inner surface and outer surface (21 and 22) adjacent to the abutment surface that are convex like a circular arc (the surface 22 and 21 are convex). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the outer and inner surface of Franson and Workman to be convex as taught by Haberkorn to provide proper sealing under high-pressure (column 3, lines 40-43 of Haberkorn).

Response to Arguments

6. Applicant's arguments filed 5/21/09 have been fully considered but they are not persuasive.

Applicants' argument that one would not combine the invention of Franson is directed to a translatory movable machine parts and Workman is directed to rotatable cylinder shafts is not persuasive because the invention are both in the art of lip seals and to have a lip seal in a translatory environment and rotatable environment is well know to one skilled in the art and the teaching of Workman would reduce wear of the lip seals (column 1, lines 60-65 of Workman).

Art Unit: 3676

Applicants' argument that the recesses of Workman's seal are only used to decrease friction resistance between the ceiling means and a movable machine part is not persuasive because the recesses do provide fluid return as stated in column 2 lines 10-13 of Workman's.

Applicants' argument that Workman does not teach a seal with a lubricant return but reaches a static-dynamic fluid seal for preventing the axial leakage of oil or other fluids along the surface of the rotatable cylinder shaft...", column 1, lines 16-61 is not persuasive in view of the statement provided in column 2, lines 10-13 of Workman's.

Applicants' argument to the dragging of liquid from a low to high-pressure regions is not persuasive since the structure taught by Franson and Workman teach all the structural limitations of the claims (e.g. see rejection above).

Applicants' argument that the examiner has not made a prima facie case of obviousness under 35 USC 103(a) on the basis of the Franson, et al. and Workman is not persuasive in view of the arguments presented above and the rejection above.

Applicants' argument for claims 4 and 6-7 are not persuasive since the reference of Franson and Workman teach all the structural limitations of claim 10.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 3676

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is 571-272-7060. The examiner can normally be reached on 6:30am to 8:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer H. Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/V. P./

Primary Examiner, Art Unit 3676

/Vishal Patel/

Primary Examiner, Art Unit 3676